

**Remarks:**

Claims 20-23 were rejected as being an obvious combination of Yamashita et al. (U.S. Patent No. 6,092,341) and Rotondo et al. (U.S. Patent No. 4,504,428).

The Yamashita reference describes a method of making a pole that includes a "frail portion" "composed of a plurality of annular plates placed one upon another and tied together" (column 2, lines 5-7) and "a cylindrical cage-like frame which serves as a reinforcing core" (column 2, lines 39-40). The cage-like frame and plates are placed in a mold, then fluid concrete is injected into the mold, and the mold is spun to make the concrete pole. The annular plates extend to the mold, so the outside surfaces of the plates are aligned with the outside of the concrete on the remainder of the pole. This arrangement makes the pole resistant to seismic disturbances, because the plates can shift relative to each other in the event of an earthquake, allowing the pole to bend without breaking. There is no teaching in Yamashita to stop the spinning, measure the thickness of the concrete, add concrete, and spin again. There also is nothing inherent in Yamashita that would require such steps, as the only alignment that is important is that the outside of the plates be aligned with the outside of the concrete, and this is achieved by properly locating the plates relative to the mold. It does not require any measurement of the thickness of the concrete.

The Rotondo reference describes a method of making a concrete pole that is intended to be more efficient than the traditional method of using a wire cage. Instead of inserting a wire cage into a mold, injecting concrete, and then spinning, Rotondo uses an injection device to simultaneously and continuously inject cut segments of wire rod and concrete into a mold while the mold is spinning and is translating back and forth relative to the injection device. As a result, a concrete pole is formed with several concentric rings of wire segments, as best illustrated in Figures 7 and 8. Rotondo teaches a continuous process that does not stop until all the layers have been formed and have been spun for a period of time after forming.

Rotondo states that "a pole product is made in *successive* layers by moving the ejection mechanism and rotating forms relative to one another through *successive* cycles." (column 1, lines 44-46, *emphasis added*) According to The American Heritage Dictionary, "successive" is defined as "following in uninterrupted order; consecutive." Using the phrase "successive cycles" indicates that there is no break between the cycles. In other words, as soon as one cycle ends, the next "successive" cycle begins. The wires and concrete are continuously deposited, and the mold moves back and forth continuously until all the layers have been formed.

There is no teaching to stop the process between layers, and it is difficult to imagine how Rotondo could stop the process between layers in an effective manner, as it would be very difficult to stop the spewing of concrete and wire lengths at exactly the right time to ensure a uniformity of the thickness of one layer before forming the next layer, and, if the uniformity of one layer were lost, the problem would be compounded

with additional layers. Rotondo also teaches that "the arrays 104 of wires 53a, due to centrifugal action, tend to work their way outwardly and are more closely or densely spaced toward the outer periphery of the pole 102." (column 6, lines 47-50) This also indicates that there is no stopping period between layers, as it would be impossible for the wires to "work their way outwardly" if there were stopping to allow the concrete to harden in between the application of layers.

To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In this case, there are several claimed steps that are not taught or suggested by the cited prior art.

Claim 20 includes the steps of spinning the mold with the wire cage and concrete in it, stopping the spinning and measuring the wall thickness, adding additional wet concrete into the hollow interior, and spinning the mold about its axis again.

Neither Rotondo nor Yamashita teaches the steps of stopping the spinning, measuring the wall thickness, adding additional wet concrete, and spinning again. Nor are these steps inherent in either process, as explained above. Since those steps are not present in either reference, they also would not be present in a combination of those references, so the claimed invention cannot be obvious in view of those references.

It also should be noted that it would not be obvious to modify the method of forming a concrete pole of Yamashita with the teachings of Rotondo. Applying layers of concrete/wire segments as taught by Rotondo would be incompatible with the cage and plates used by Yamashita. If one attempted to apply concrete and wire in successive layers to the cage and plates of Yamashita, the wire would become entangled with the cage-like frame and plates of Yamashita and would make a huge mess. Thus, such a combination would not be obvious to a person of ordinary skill in the art.

It also would not be obvious to modify the method of forming a concrete pole of Rotondo with the teachings of Yamashita, because Rotondo *teaches away* from the use of a wire cage. As stated above, the Rotondo invention is intended to be an alternative to the traditional cage which is superior to the traditional method in that it saves time and labor. Rotondo notes that "the making of reinforced concrete products usually involves, as a first step, the laborious construction of wire work in a mold or form, after which concrete is poured and allowed to set and cure" (column 1, lines 16-19). Rotondo goes on to say that such techniques are "not feasible or economically practical" (column 1, lines 21-22) and that the apparatus of Rotondo provides an improvement over such techniques because it permits "the placement of wire rods in ordered patterns contemporaneously with the pouring of concrete into a form *thereby eliminating tedious and expensive manual labor*". (column 1, lines 28-30, *emphasis added*)

Thus, the Rotondo reference teaches that using a wire framework, such as the cage-like frame described in the Yamashita reference, is undesirable and should be completely replaced with the injection of cut wires and concrete. Rotondo is *teaching*

away from surrounding and tying the elongated strands to form a strand cage similar to the cage-like frame of Yamashita. It would not be obvious to a person of ordinary skill in the art to go against the teaching of Rotondo to use a strand cage. And again, as described above, injecting wire strands into a mold in which there is a cage would create a disastrous mess which could not be obvious to a person of ordinary skill in the art.

Since claim 20 recites a method that is not taught or suggested by the cited references, it should be allowed.

In addition, claim 21 depends from claim 20 and further recites the step of "placing a plurality of second elongated reinforcing strands into said mold outside the first plurality of strands and tying said second elongated reinforcing strands to a second spiral strand surrounding the second elongated reinforcing strands prior to inserting said first charge of wet concrete into said mold". Neither Rotondo nor Yamashita teaches or suggests this limitation.

Claim 23 adds the steps of "encasing some of said elongated strands in casings for part of their length adjacent to the upper end of the mold prior to inserting the wet concrete; allowing said wet concrete to dry after said spinning again; and tensioning said encased elongated strands after said wet concrete has dried." Neither Rotondo nor Yamashita teaches or suggests encasing some of the elongated strands in casings and tensioning the encased strands after the wet concrete has dried. The strands in Rotondo are not tensioned at all and cannot be tensioned, as they are ejected as segmented pieces into the concrete as it is being deposited into the mold. The strands in Yamashita may be tensioned prior to adding the concrete, but Yamashita does not involve encasing the strands and tensioning them after the concrete has dried.

Since every claim now pending in the present application defines an invention that is novel and unobvious in view of the prior art, Applicant respectfully requests allowance of all the claims now pending. If there are any remaining issues to be resolved in this case, Applicant's attorney would appreciate receiving a phone call from the Examiner to help expedite their resolution.

Respectfully submitted,



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